

REMARKS

Status of Claims

Claims 1-27 are pending in the present application.

Introduction

The present invention relates to the adaptation of novel dry cleaning chemistries for use in methods in the home or similar laundering environment in a manner that is convenient and economical, consumer-safe, and environmentally sound. Although improvements in automatic consumer-operated washing machines and in cleaning agent formulations are steadily being made, as a general rule, conventional home laundering methods consume considerable amounts of water, energy, and time. Water-based methods are not suitable for some natural fiber fabrics, such as silks, woolens and linens, so that whole classes of garments and fabrics cannot be home laundered, but instead, must be sent out for professional dry cleaning. During water washing, the clothes become saturated with water and some fibers swell and absorb water. After washing, the water must be removed from the clothes. Typically, this is performed in a two-step process including a hard spin cycle in the washer and a full drying cycle in an automatic dryer. The hard spin cycles tend to cause undesirable wrinkling. Even after spinning, drying cycle times are undesirably long.

The solution to this problem was the advent of the traditional dry cleaning business. Consumers had to travel to the dry cleaners, drop off clothes, pay for dry cleaning, and pick the clothes up. While the dry cleaning process is useful to the consumer, it plays terrible havoc with the environment. Traditional dry cleaning uses halogenated hydrocarbons, such as perchloroethylene (also known as "perc"). Because the use of perc is calamitous, strict environmental regulations exist to control its use and disposition. The stricter controls sent many in the dry cleaning industry towards petroleum-based solvents. These solvents are inflammable and are smog-producers. Accordingly, the use of these solvents in the home is out of the question. Likewise, conventional dry cleaning solvents and formulations are not suitable for use in methods of laundering fabric articles in a conventional automatic consumer-operated laundering apparatus.

The present invention achieves a technical advance to solve the foregoing problems associated with adapting conventional dry cleaning methods for convenient and safe use in the home environment and related consumer-operated laundering facilities such as those often found in dormitories or conventional laundry mats.

Rejection of Claims 1-27 under 35 USC § 102(b)

In the Office Action dated September 30, 2005, the Office rejected claims 1-27 as being anticipated by the following references: Kasprzak (U.S. Patent No. 4685930 and EPO 0 182 583); Sanders (U.S. Patent No. 4247330); Madore et al. (U.S. Patent No. 5091105); Donkers et al. (U.S. Patent No. 4961753); Graiver et al. (U.S. Patent No. 4999398); Ona (U.S. Patent No. 4388437); Inada et al. (U.S. Patent No. 5443747); and Kemerer (U.S. Patent No. 4708807). Applicants' arguments with respect to each of these references will be discussed below.

(a) Kasprzak (U.S. Patent No. 4685930 and EPO 0 182 583)

The Kasprzak references disclose a method for pre-spot treatment prior to subjecting the entire garment to a cleaning process. Also, the use of cyclic siloxanes disclosed in the Kasprzak references is for pre-wash treatments, which would still necessitate a regular laundering step to clean the entire garment (4:31-48).

The present invention is distinguishable from the disclosure of Kasprzak references in terms of the treatment of the entire fabric garment. There is no disclosure or suggestion in Kasprzak references that the entire garment is in fact cleaned according to the method as described in the present invention.

In view of these remarks, Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 102(b) as being anticipated by the Kasprzak references.

(b) Sanders (U.S. Patent No. 4247330)

The Sanders reference discloses cleaning and protective compositions for hard surfaces, i.e., cars. (Abstract). Such compositions may contain linear, branched or cyclic siloxanes (3:1-16). The Sanders reference discloses that the compositions contain alcohols, emulsifying agents (e.g., quaternary ammonium salts), aliphatic alcohols, water (5:45-47; 6:13-40), and other ingredients like preservatives, antifoams, and coloring agents (6:67-7:2).

Sanders does not teach or suggest that such compositions would be suitable for textile fabrics. Sanders also does not teach or suggest two limitations of the instant claims: bringing said working fluid and the at least one washing adjuvant in contact with the fabric in an automatic consumer-operated laundering apparatus; and applying mechanical energy to provide relative movement within said fabric in the automatic consumer-operated laundering apparatus.

In view of these remarks, Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 102(b) as being anticipated by the Sanders reference.

(c) Madore et al. (U.S. Patent No. 5091105)

The Madore et al. reference discloses a detergent composition that has deterative properties and a viscosity greater than 5,000 centistokes. Furthermore, the Madore et al. reference teaches that the working fluid is water, alcohol, or glycol (5:1-5). The reference discloses siloxane as a softening agent rather than a working fluid. Finally, the reference discloses that bulk fluid is water wherein only a small amount comprises the composition (of which the siloxane constitutes a small percentage).

The formulation of Madore et al. displays a viscosity that is not compatible with its use as a working fluid in the instantly claimed methods of cleaning because one would not be able to adequately clean, spin, and remove the formulation from the fabric. Furthermore, one of ordinary skill in the art would not be led to the use of siloxane as the bulk fluid based upon the teachings of Madore et al. because this reference discloses that siloxane is a small percentage of the composition that is dissolved in a greater volume of a bulk fluid comprising some other matter.

In view of these remarks, Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 102(b) as being anticipated by Madore et al.

(d) Donkers et al. (U.S. Patent No. 4961753)

The Donkers et al. disclosure is directed to aqueous compositions, where the bulk of the composition is water. The disclosure broadly teaches compositions and methods for treating fabrics for achieving a particular feel for the fabric, e.g., soft and fluffy to firm and bodied (4:1-9) and for affecting rewettability of the fabric (5: 36-39). The disclosure does not teach use of the compositions for cleaning per se.

The present invention is distinguished from the Donkers et al. reference in that it is directed to methods of cleaning, rather than treatment methods, that leave no residue on the fabric that affects feel or rewettability of the fabric. The present invention also contains the bulk of the composition as a working fluid, which is non-aqueous in character. Furthermore, any water that is a co-solvent of the composition of the present invention is present in small amounts

rather than comprising the majority of the bulk fluid in the aqueous composition of Donkers et al.

In view of these remarks, Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 102(b) as being anticipated by Donkers et al.

(e) Graiver et al. (U.S. Patent No. 4999398)

Graiver et al. discloses compositions of stable aqueous micro-emulsions comprising water, a polydiorganosiloxane precursor, a polymerization catalyst, and a surfactant having a hydrophilic-lipophilic balance in the range of 10-20 and methods of making same. (4:11-53)

Graiver et al. does not teach or suggest two limitations of the instant claims: bringing said working fluid and the at least one washing adjuvant in contact with the fabric in an automatic consumer-operated laundering apparatus; and applying mechanical energy to provide relative movement within said fabric in the automatic consumer-operated laundering apparatus.

In view of these remarks, Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 102(b) as being anticipated by Graiver et al.

(f) Ona (U.S. Patent No. 4388437)

Ona discloses a composition of stable aqueous micro-emulsions comprising (A) an organosiloxane, (B) a surfactant, (C) an organotitanate, organozirconate, or organogermanate; (D) organic acid for pH adjustment to range from 2.5 to less than 7.0; and (E) water sufficient to form an emulsion (1:60-2:12). Ona teaches that the composition is used to promote fabric treatment by absorption of the siloxane (A) into the fabric (2:55-59). Furthermore, Ona teaches that omission of component (C) or (D) results in loss of (A) siloxane absorption to fabric (3:51-53).

Ona does not teach or suggest any additional uses of the composition lacking component (C) or (D) with regard to fabric cleaning or treatment. Thus, Ona does not teach that use of siloxane in compositions lacking components (C) or (D) would be suitable for use as a working fluid. Ona also does not teach or suggest two limitations of the instant claims: bringing said working fluid and the at least one washing adjuvant in contact with the fabric in an automatic consumer-operated laundering apparatus; and applying mechanical energy to provide relative movement within said fabric in the automatic consumer-operated laundering apparatus.

In view of these remarks, Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 102(b) as being anticipated by Ona.

(g) Inada et al. (U.S. Patent No. 5443747)

Inada et al. discloses compositions that are either a water system cleaning agent or a dewater cleaning agent (3:40-42). The reference discloses that the former composition comprises water, a polyorganosiloxane (cyclic or linear chain), a surfactant, (4:20-26) and optionally, the usual additives (6:64-68). Furthermore, the former composition comprises siloxane, a surfactant, and a hydrophilic solvent (8:1-8). Finally, the reference discloses that the composition is suitable for cleaning metals, ceramics, plastics, and the like (7:6-8; 8:60-65).

The Inada et al. reference does not teach or suggest that the composition is suitable for cleaning textile fabrics. In view of the fact that textile fabrics are vastly dissimilar to metals, ceramics, plastics, and the like, one of ordinary skill in the art would not be led to use the cleaning composition of Inada et al. to clean textile fabrics. Inada et al. also does not teach or suggest two limitations of the instant claims: bringing said working fluid and the at least one washing adjuvant in contact with the fabric in an automatic consumer-operated laundering apparatus; and applying mechanical energy to provide relative movement within said fabric in the automatic consumer-operated laundering apparatus.

In view of these remarks, Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 102(b) as being anticipated by Inada et al.

(h) Kemerer (U.S. Patent No. 4708807)

The Kemerer disclosure is directed to the use of compositions for cleaning and waterproofing textile fabrics. When used principally as a spot-treatment formulation, the disclosure teaches that cyclic siloxane and other solvents act to dissolve and/or loosen the soil in which it contacts. However, complete removal of the soil still requires an additional cleaning step (6:24-34). Thus, the disclosure does not teach the use of cyclic siloxane as a working fluid as part of a cleaning composition and method.

The Kemerer disclosure teaches that compositions described therein may used as part of an immersion procedure to clean the fabric similar to that disclosed by Charreau (id.). However, Charreau discloses a process for dry cleaning contaminated textile articles with a composition comprising a solvent selected from hydrocarbons or chlorinated hydrocarbons, a

methyldopolysiloxane waterproofing agent and an alkyl titanate. Thus, one of ordinary skill in the art would understand this disclosure to teach that the conventional dry cleaning solvents other than cyclic siloxanes are used as the working fluid in immersion cleaning processes.

Importantly, Kemerer provides a narrow teaching that his formulations are suitable for cleaning and waterproofing. Kemerer fails to teach that such formulations are suitable for laundering fabric articles, the object of which is cleaning and fabric care (i.e., preserving the integrity of the fabric). Furthermore, the methods of Kemerer and Charreau employ dry cleaning compositions that would never be suitable for use in a consumer-operated laundering apparatus.

In view of these remarks, Applicants respectfully request withdrawal of the claim rejections under 35 U.S.C. § 102(b) as being anticipated by Kemerer.

(i) None of the asserted references teaches or suggests that the disclosed compositions or methods of use are suitable for a consumer-operated, automatic laundering apparatus.

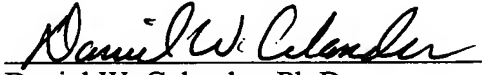
As a separate argument for patentability of the instant claims as amended herein, Applicants note that none of the asserted references teaches or suggests that the recited chemical compositions are suitable in methods for fabric cleaning with the use of a consumer-operated automatic laundering apparatus. At the time these prior art references became available to the public, conventional dry cleaning compositions were deemed too hazardous for application in a conventional consumer-operated automatic laundering apparatus. Accordingly, a person of ordinary skill in the art would not have construed that the teachings of the asserted references would be applicable to use in the home environment and related consumer-operated laundering facilities such as those often found in dormitories or conventional laundry mats.

Applicants maintain that the amendment of the claims to recite the limitation drawn to use of an automatic consumer-operated laundering apparatus obviates the Office's grounds of rejection of the claims under 35 U.S.C. § 102(b) as being anticipated by all the asserted prior art references of record.

Applicants submit that all pending claims of the present application are in condition for allowance. Early notice of such action is earnestly solicited.

Respectfully submitted,

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